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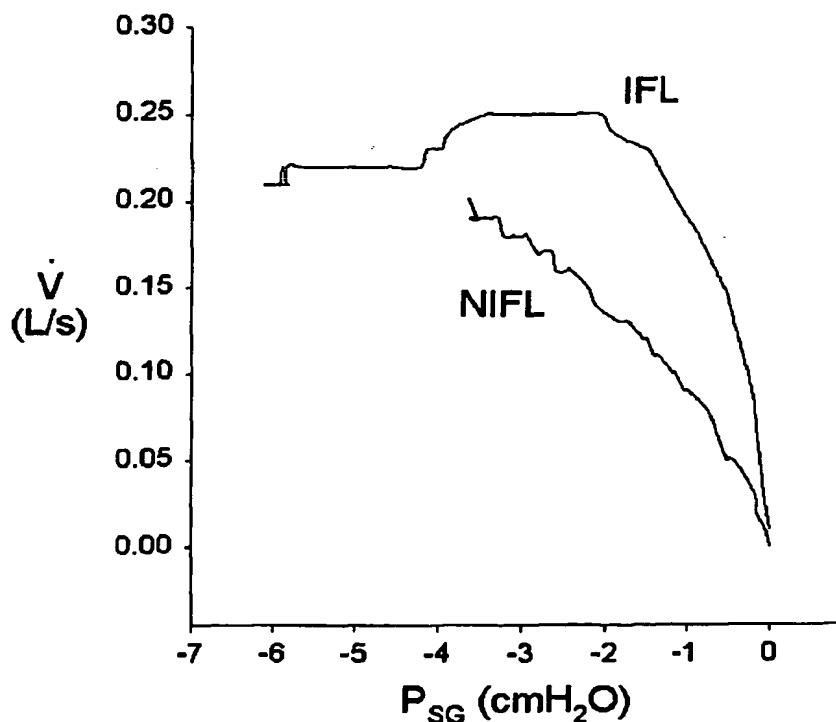
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(54) Title: SYSTEM FOR DIAGNOSING AND TREATING SLEEP APNEA



(57) **Abstract:** Two programs measure upper airway resistance using Resistance = Pressure/Flow. Raw flow and pressure data is divided into breaths and time adjusted so each breath starts with the value zero. Each breath is graphed as flow in the y-axis and time in the x-axis. The slope between points Flow = 0 and Flow = 0.20 is calculated. The resistance is the inverse of the slope. The second program determines whether a breath is flow limited or not. It also uses the flow and time data to perform a curve fitting to describe the flow-time in meaningful polynomial function  $F(P) = A t^3 + B t^2 + C t + D$ . The derivative of this function is  $F' = 3A t^2 + 2B t + C$ . If the value of the derivative  $F'$  at maximum flow is less than or equal zero, then it is a flow limited breath, otherwise, it is non flow limited breath. Also, the need for a pressure-monitoring catheter is obviated.



SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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